## Halogen


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# Product identification

*The following glossary of terms and descriptions can help you when checking halogen lamp specifications and explains how to use the order codes when ordering products. Within each product line, lamps are divided into families - within families, lamps are listed by wattage.*

***Watts:***
*Energy used. To find actual energy used (kWh) multiply power (watts shown) x time divided by 1000*

***Product Description:***
*The lamp's identification code*

***Product Code:***
*It is important to use this code when ordering to ensure that you receive the exact product you require*

***Beam Spread Degrees:***
*The angle of the cone of light produced by a reflector lamp at 50% of its intensity*

***Volts:***
*Each lamp's voltage is listed*

***Pack Quantity:***
*The number of lamps in one box*

**Precise™ MR16 ConstantColor™**

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 2900°K** | | | | | | | |
| **20** | 12 | **ESX/CG** | 3250 | 13 | 5000 | 10 | **20858** |
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 2900°K** | | | | | | | |
| **20** | 12 | **BAB/CG** | 500 | 40 | 5000 | 10 | **20857** |

***Lamp:***
*Description of lamp type, and product features*

***Peak Beam Candelas:***
*Luminous intensity of the lamp beam expressed in candelas*

***Rated Average Life:***
*The point in time when 50% of installed lamps are still burning*

**BAB / CG**

*ANSI -Code*

*Product Feature, eg. Cover glass*

# *If you're looking for halogen, aim for a Precise solution*

Precise MR16

Precise MR11

- *Cool, white light, precise beam control, excellent colour performance and a lamp life of up to 6,000 hours.*
- *Ideal for retail display lighting, decorative lighting and spotlighting of individual features - including heat sensitive items.*
- *Choose from a wide range of beam angles and select Precise MR16 lamps for ultra - violet control.*

## *Precise™ MR16 & MR11*

**Choose:**

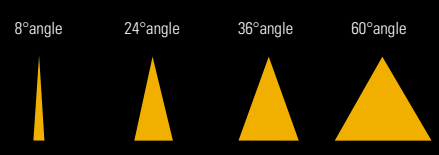
**Precise ConstantColor**
for consistent light quality and exceptional long life.

**Precise Bright**
for outstanding light output in a mid range lamp.

**Precise Alutech**
for all your heat sensitive halogen fixtures.

**Precise MR11**
for high output, light quality and long life in an extra compact form.

**Range of beam angles**
GE Precise MR16 lamps offer a choice of nominal beam angles from 8˚ to 60˚. The range of beam angles can be used to either highlight single features with a tight focus or provide a wash of ambient lighting, with a variety of effects achievable with intermediate beams.




**Halogen uplighters, downlighters and spotlights at the Bang & Olufsen Centre, Copenhagen, Denmark.**

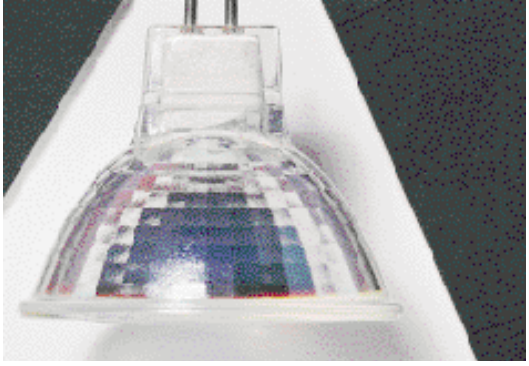
**Applications:**

retail display lighting, decorative lighting and spotlighting of individual features.

## *Precise*™ ConstantColor™

**The long lasting premium quality halogen lamp.**

The Precise ConstantColor lamp features revolutionary GE Thin Film Technology to give consistent light output for up to the 6000 hour life of the lamp. The advanced coating is designed to withstand temperatures of up to 500˚C, making it the ideal choice for long-term reliability and consistent light quality.



## *Precise*™ Bright

**Outstanding light output and beam quality in a mid range lamp.**

Precise Bright sets new performance standards for mid-range halogen lamps, offering outstanding long life for a mid-range product. Its advanced, computer-designed reflector gives a smooth beam and outstanding light output compared to similar lamps. Precise Bright is available in both open and closed forms.

- **Up to 6000 hours life**
- **99-98% Lumen maintenance**
- **Double sided dichroic coating**
- **With UV control**
- **The most consistent light output available**

- **Up to 4000 hours life**
- **Outstanding light output and beam quality from a mid-range lamp**
- **Upgraded reflector**
- **UV control in both open and closed formats**

## *Precise*™ Alutech™

**The perfect choice for heat sensitive halogen fixtures.**

For many years finding a halogen lamp suitable for high technology electronic fixtures was a problem. Precise Alutech is the answer. With a GE developed aluminium coating, almost all of the heat is reflected away from the fixture. Throwing heat forward has advantages in downlighters like minimising heat build up in ceiling voids.

- **Heat reflected forward**
- **Ideal for heat sensitive fixtures**
- **3000 hours life**
- **With UV control**

## *Precise*™ MR11

**The extra compact, high performance halogen lamp.**

GE Precise MR11's pack the high output, light quality and long life of halogen into an extra compact form, making them ideal where space is at a premium.

- **Extra-compact 35 mm size - perfect for lighting cabinet displays**
- **3500 hours life**
- **Closed lamps with UV control**

# Halogen

## Precise™ MR16 ConstantColor™

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 2900°K, UV control** | | | | | | | |
| **20** | 12 | **ESX/CG** | 3350 | 12 | 5000 | 10 | **20858** |
| **20** | 12 | **BAB/CG** | 475 | 40 | 5000 | 10 | **20857** |
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 3000°K, UV control** | | | | | | | |
| **35** | 12 | **FRB/CG** | 7500 | 12 | 5000 | 10 | **20864** |
| **35** | 12 | **FRA/CG** | 3200 | 20 | 5000 | 10 | **20860** |
| **35** | 12 | **FMW/CG** | 900 | 40 | 5000 | 10 | **20859** |
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 3050°K, UV control** | | | | | | | |
| **50** | 12 | **EXT/CG** | 8500 | 14 | 6000 | 10 | **20872** |
| **50** | 12 | **EXZ/CG** | 2800 | 25 | 6000 | 10 | **20871** |
| **50** | 12 | **EXN/CG** | 1450 | 40 | 6000 | 10 | **20867** |
| **50** | 12 | **FNV/CG** | 850 | 55 | 6000 | 10 | **20865** |
| **71** | 12 | **EYF/CG** | 9800 | 15 | 4000 | 10 | **20876** |
| **71** | 12 | **EYJ/CG** | 4600 | 25 | 4000 | 10 | **20874** |
| **71** | 12 | **EYC/CG** | 1950 | 42 | 4000 | 10 | **20873** |

| | 20W | | 35W | | 50W | | 71W | |
|---|---|---|---|---|---|---|---|---|
| | ESX/CG | | FRB/CG | | EXT/CG | | EYF/CG | |
| **m** | **12°** | **lux** | **12°** | **lux** | **14°** | **lux** | **15°** | **lux** |
| 1 | .20 | 3350 | .20 | 7500 | .25 | 8500 | .25 | 9800 |
| 2 | .40 | 838 | .40 | 1875 | .50 | 2125 | .50 | 2450 |
| 3 | .60 | 372 | .60 | 833 | .70 | 944 | .70 | 1089 |
| 4 | .80 | 209 | .80 | 469 | 1.00 | 531 | 1.00 | 613 |
| 5 | 1.00 | 134 | 1.00 | 300 | 1.25 | 340 | 1.25 | 392 |

| | FRA/CG | | EXZ/CG | | EYJ/CG | |
|---|---|---|---|---|---|---|
| **m** | **20°** | **lux** | **25°** | **lux** | **25°** | **lux** |
| 1 | .35 | 3200 | .40 | 2800 | .40 | 4600 |
| 2 | .70 | 800 | .90 | 700 | .90 | 1150 |
| 3 | 1.10 | 356 | 1.30 | 311 | 1.30 | 511 |
| 4 | 1.40 | 200 | 1.80 | 175 | 1.80 | 298 |
| 5 | 1.75 | 128 | 2.25 | 112 | 2.25 | 184 |

| | BAB/CG | | FMW/CG | | EXN/CG | | EYC/CG | |
|---|---|---|---|---|---|---|---|---|
| **m** | **40°** | **lux** | **40°** | **lux** | **40°** | **lux** | **42°** | **lux** |
| 1 | .70 | 475 | .70 | 900 | .70 | 1450 | .90 | 1950 |
| 2 | 1.50 | 119 | 1.50 | 225 | 1.50 | 363 | 1.50 | 488 |
| 3 | 2.20 | 53 | 2.20 | 100 | 2.20 | 161 | 2.30 | 217 |
| 4 | 2.90 | 30 | 2.90 | 56 | 2.90 | 91 | 3.10 | 122 |
| 5 | 3.62 | 19 | 3.62 | 36 | 3.62 | 58 | 3.87 | 78 |

| | FNV/CG | |
|---|---|---|
| **m** | **55°** | **lux** |
| 1 | 1.00 | 850 |
| 2 | 2.00 | 213 |
| 3 | 3.10 | 94 |
| 4 | 4.20 | 53 |
| 5 | 5.20 | 34 |

These cones are for closed lamps.

# Halogen

## Precise™ Bright MR16

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 50 mm Open - Cap GU5.3 - Constant Colour Temperature 3000°K, UV control** | | | | | | | |
| **20** | 12 | **M69/BAB** | 500 | 36 | 4000 | 10 | **330712** |
| **35** | 12 | **M70/FRA** | 3660 | 24 | 4000 | 10 | **330713** |
| **35** | 12 | **M81/FMW** | 1620 | 36 | 4000 | 10 | **330716** |
| **50** | 12 | **M50/EXZ** | 5920 | 24 | 4000 | 10 | **330709** |
| **50** | 12 | **M58/EXN** | 2600 | 36 | 4000 | 10 | **330710** |
| **50** | 12 | **M80/FNV** | 1190 | 60 | 4000 | 10 | **330715** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 3000°K, UV control** | | | | | | | |
| **20** | 12 | **M268/ESX/CG** | 6000 | 8 | 4000 | 10 | **330736** |
| **20** | 12 | **M269/BAB/CG** | 450 | 36 | 4000 | 10 | **330737** |
| **35** | 12 | **M270/FRA/CG** | 2950 | 24 | 4000 | 10 | **330738** |
| **35** | 12 | **M281/FMW/CG** | 1300 | 36 | 4000 | 10 | **330745** |
| **50** | 12 | **M249/EXT/CG** | 10100 | 8 | 4000 | 10 | **330725** |
| **50** | 12 | **M250/EXZ/CG** | 4750 | 24 | 4000 | 10 | **330734** |
| **50** | 12 | **M258/EXN/CG** | 2100 | 36 | 4000 | 10 | **330735** |
| **50** | 12 | **M280/FNV/CG** | 950 | 60 | 4000 | 10 | **330744** |

### 20W

M268/ESX/CG

| m | 8° | lux |
|---|---|---|
| 1 | .14 | 6000 |
| 2 | .28 | 1500 |
| 3 | .42 | 667 |
| 4 | .56 | 375 |
| 5 | .70 | 240 |

### 35W

M270/FRA/CG

| m | 24° | lux |
|---|---|---|
| 1 | .43 | 2950 |
| 2 | .85 | 738 |
| 3 | 1.28 | 328 |
| 4 | 1.70 | 184 |
| 5 | 2.13 | 118 |

M269/BAB/CG

| m | 36° | lux |
|---|---|---|
| 1 | .65 | 450 |
| 2 | 1.30 | 113 |
| 3 | 1.95 | 50 |
| 4 | 2.60 | 28 |
| 5 | 3.25 | 18 |

M281/FMW/CG

| m | 36° | lux |
|---|---|---|
| 1 | .65 | 1300 |
| 2 | 1.30 | 325 |
| 3 | 1.95 | 144 |
| 4 | 2.60 | 81 |
| 5 | 3.25 | 52 |

### 50W

M249/EXT/CG

| m | 8° | lux |
|---|---|---|
| 1 | .14 | 10100 |
| 2 | .28 | 2525 |
| 3 | .42 | 1122 |
| 4 | .56 | 631 |
| 5 | .70 | 404 |

M250/EXZ/CG

| m | 24° | lux |
|---|---|---|
| 1 | .43 | 4750 |
| 2 | .85 | 1188 |
| 3 | 1.28 | 528 |
| 4 | 1.79 | 297 |
| 5 | 2.13 | 190 |

M258/EXN/CG

| m | 36° | lux |
|---|---|---|
| 1 | .65 | 2100 |
| 2 | 1.30 | 525 |
| 3 | 1.95 | 233 |
| 4 | 2.60 | 131 |
| 5 | 3.25 | 84 |

M280/FNV/CG

| m | 60° | lux |
|---|---|---|
| 1 | 1.15 | 950 |
| 2 | 2.31 | 238 |
| 3 | 3.46 | 106 |
| 4 | 4.62 | 59 |
| 5 | 5.77 | 38 |

These cones are for closed lamps. Open lamps' values typically 10% higher.

# Halogen

## Precise™ Alutech™ MR16

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Aluminised Coating - 50 mm Closed - Cap GU5.3 - Constant Colour Temperature 3000°K, UV control** | | | | | | | |
| **20** | 12 | **M269/BAB/CG/AL** | 450 | 36 | 3000 | 10 | **35472** |
| **35** | 12 | **M281/FMW/CG/AL** | 1300 | 36 | 3000 | 10 | **35471** |
| **50** | 12 | **M258/EXN/CG/AL** | 1800 | 36 | 3000 | 10 | **35470** |
| **50** | 12 | **M280/FNV/CG/AL** | 700 | 60 | 3000 | 10 | **35467** |

| | 20W | | 35W | | 50W | |
|---|---|---|---|---|---|---|
| | M269/BAB/CG/AL | | M28I/FMW/CG/AL | | M258/EXN/CG/AL | |
| **m** | **36°** | **lux** | **36°** | **lux** | **36°** | **lux** |
| 1 | .65 | 450 | .65 | 1300 | .65 | 1800 |
| 2 | 1.30 | 113 | 1.30 | 325 | 1.30 | 450 |
| 3 | 1.95 | 50 | 1.95 | 144 | 1.95 | 200 |
| 4 | 2.60 | 28 | 2.60 | 81 | 2.69 | 113 |
| 5 | 3.25 | 18 | 3.25 | 52 | 3.25 | 72 |

| | M280/FNV/CG/AL | |
|---|---|---|
| **m** | **60°** | **lux** |
| 1 | 1.15 | 700 |
| 2 | 2.31 | 175 |
| 3 | 3.46 | 78 |
| 4 | 4.62 | 44 |
| 5 | 5.77 | 28 |

These cones are for closed lamps.

## Precise™ MR11

| Watts | Volts | Cap | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 35 mm Open - Constant Colour Temperature 2900°K** | | | | | | | | |
| **12** | 12 | GU4 | **M64/FTA** | 4400 | 8 | 2000 | 10 | **30759** |
| **20** | 12 | GU4 | **M52/FTB** | 4400 | 10 | 3500 | 10 | **30755** |
| **20** | 12 | GU4 | **M51/FTC** | 2000 | 17 | 3500 | 10 | **30754** |
| **20** | 12 | GU4 | **M62/FTD** | 550 | 26 | 3500 | 10 | **30773** |
| **35** | 12 | GU4 | **M65/FTE** | 7000 | 10 | 3500 | 10 | **30760** |
| **35** | 12 | GU4 | **M66/FTF** | 2300 | 21 | 3500 | 10 | **30774** |
| **35** | 12 | GU4 | **M199/FTH** | 1300 | 26 | 3500 | 10 | **30890** |
| **Dichroic Mirror - 35 mm Open - Constant Colour Temperature 2900°K -B15D Cap** | | | | | | | | |
| **20** | 12 | B15D | **M54/FST** | 1760 | 16 | 3500 | 10 | **30778** |
| **20** | 12 | B15D | **M63/FSV** | 600 | 30 | 3500 | 10 | **30780** |
| **Dichroic Mirror - 35 mm Closed - Constant Colour Temperature 2900°K, UV control** | | | | | | | | |
| **12** | 12 | GU4 | **M264/FTA/CG** | 3960 | 8 | 2000 | 10 | **30768** |
| **20** | 12 | GU4 | **M252/FTB/CG** | 3960 | 10 | 3500 | 10 | **30763** |
| **20** | 12 | GU4 | **M251/FTC/CG** | 1800 | 17 | 3500 | 10 | **30762** |
| **20** | 12 | GU4 | **M262/FTD/CG** | 490 | 26 | 3500 | 10 | **30775** |
| **35** | 12 | GU4 | **M265/FTE/CG** | 6300 | 10 | 3500 | 10 | **30769** |
| **35** | 12 | GU4 | **M266/FTF/CG** | 2070 | 21 | 3500 | 10 | **30777** |

# Halogen

## Precise™ MR11

| | 12W | | 20W | | 20W | | 35W | |
|---|---|---|---|---|---|---|---|---|
| | M64/FTA | | M52/FTB | | | | M65/FTE | |
| **m** | **8°** | **lux** | **10°** | **lux** | | | **10°** | **lux** |
| 1 | .14 | 4400 | .17 | 4400 | | | .17 | 7000 |
| 2 | .28 | 1100 | .35 | 1100 | | | .35 | 1750 |
| 3 | .42 | 489 | .52 | 483 | | | .52 | 778 |
| 4 | .56 | 275 | .70 | 275 | | | .70 | 438 |
| 5 | .70 | 176 | .87 | 176 | | | .87 | 280 |

| | M51/FTC | | M54/FST | | M66/FTF | |
|---|---|---|---|---|---|---|
| **m** | **17°** | **lux** | **16°** | **lux** | **21°** | **lux** |
| 1 | .30 | 2000 | .28 | 1760 | .37 | 2300 |
| 2 | .60 | 500 | .56 | 440 | .74 | 575 |
| 3 | .90 | 222 | .84 | 196 | 1.11 | 256 |
| 4 | 1.20 | 125 | 1.12 | 110 | 1.48 | 144 |
| 5 | 1.49 | 80 | 1.41 | 70 | 1.85 | 92 |

| | M62/FTD | | M63/FSV | | M199/FTH | |
|---|---|---|---|---|---|---|
| **m** | **26°** | **lux** | **30°** | **lux** | **26°** | **lux** |
| 1 | .46 | 550 | .54 | 600 | .46 | 1300 |
| 2 | .92 | 138 | 1.07 | 150 | .92 | 325 |
| 3 | 1.39 | 61 | 1.61 | 67 | 1.39 | 144 |
| 4 | 1.85 | 34 | 2.14 | 38 | 1.85 | 81 |
| 5 | 2.31 | 22 | 2.68 | 24 | 2.31 | 52 |

These cones are for open lamps.

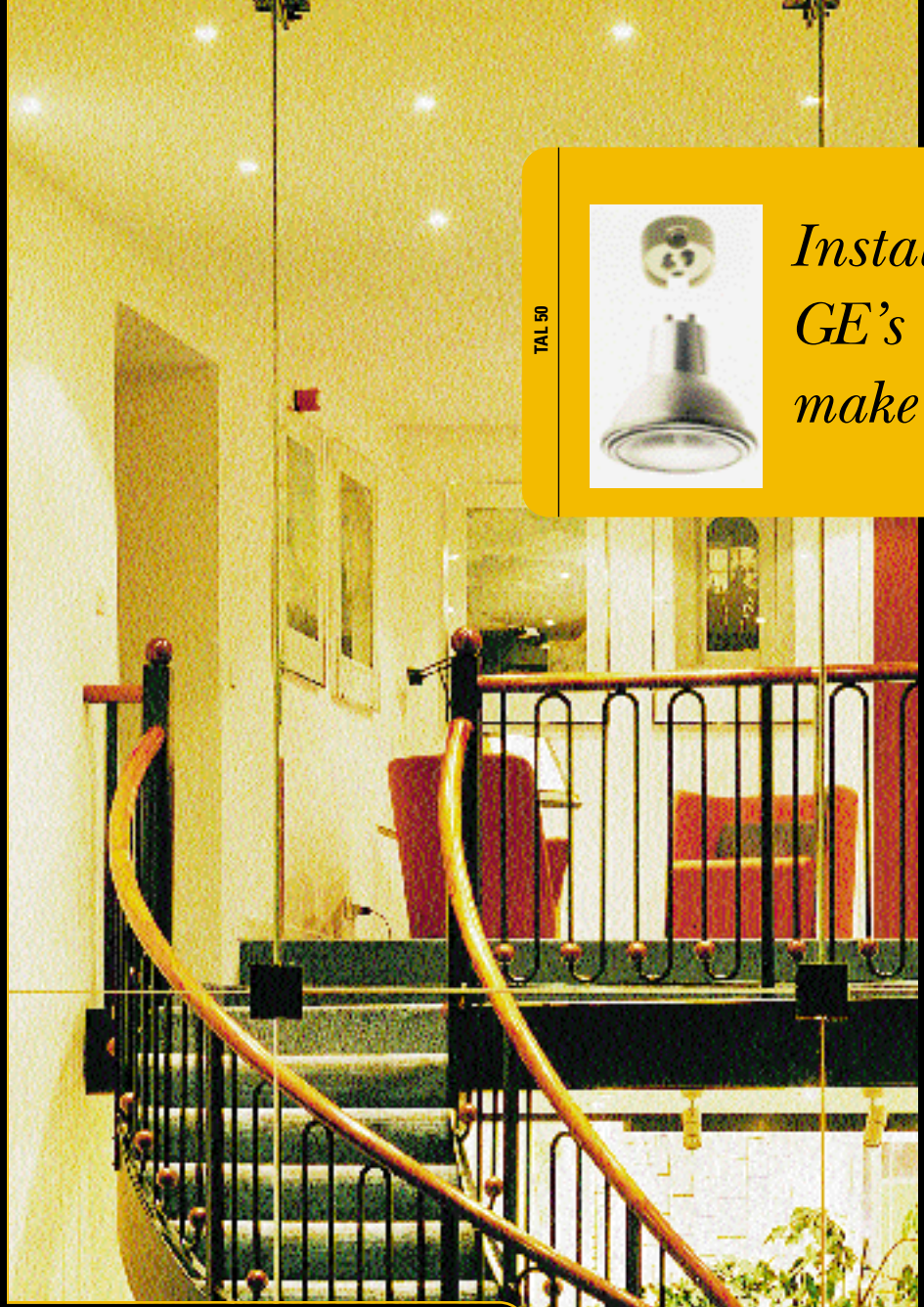
| | 12W | | 20W | | 20W | | 35W | |
|---|---|---|---|---|---|---|---|---|
| | M264/FTA/CG | | M252/FTB/CG | | | | M265/FTE/CG | |
| **m** | **8°** | **lux** | **10°** | **lux** | | | **10°** | **lux** |
| 1 | .14 | 3960 | .17 | 3960 | | | .17 | 6300 |
| 2 | .28 | 990 | .35 | 990 | | | .35 | 1575 |
| 3 | .42 | 440 | .52 | 440 | | | .52 | 700 |
| 4 | .56 | 248 | .70 | 248 | | | .70 | 394 |
| 5 | .70 | 158 | .87 | 158 | | | .87 | 252 |

| | M251/FTC/CG | | M266/FTF/CG | |
|---|---|---|---|---|
| **m** | **17°** | **lux** | **21°** | **lux** |
| 1 | .30 | 1800 | .37 | 2070 |
| 2 | .60 | 450 | .74 | 518 |
| 3 | .90 | 200 | 1.11 | 230 |
| 4 | 1.20 | 113 | 1.48 | 129 |
| 5 | 1.49 | 72 | 1.85 | 83 |

| | M262/FTD/CG | |
|---|---|---|
| **m** | **26°** | **lux** |
| 1 | .46 | 490 |
| 2 | .92 | 123 |
| 3 | 1.39 | 54 |
| 4 | 1.85 | 31 |
| 5 | 2.31 | 20 |

These cones are for closed lamps.

# Twist & Lock



TAL 50



## *Installing halogen? GE's Twist & Lock make it easy*

- *GE's unique Twist and Lock (TAL) system enables you to locate the lamp with one simple, foolproof action.*
- *The first low voltage halogen lamp designed for easy installation.*
- *No more installation problems or poor connections caused by bent or broken connecting pins, so no more wasted lamps.*

**GE's Twist And Lock's tough mechanical bond and greater electrical contact between lamp and base means:**

No retaining springs or rings to fit or release - offering faster lamp installation and replacement;

No risk of arcing - improving electrical reliability and safety.

**TAL 50** lamps are 50 mm dichroic mirror lamps with ConstantColor coatings to give exceptional long life and consistent light quality.

**3,500 hours life**

up to 50% longer than standard dichroic lamps.

**98% lumen maintenance**

producing near maximum light output even at 3,500 hours.

**Consistent white light**

with no colour shift throughout the rated life of the lamp.

**TAL 100** lamps are 100 mm reflector lamps designed for long life and extra high light intensity.

**Up to 3,500 hours life**

**Exceptional light intensity**

up to 17% higher than the nearest compatible lamp.

**TAL downlighters welcome visitors to Timothy Guy Design's studio in Truro, UK.**

**Applications:**

retail, displays, reception areas and residential interior lighting.

# Halogen

## TAL 50 ConstantColor™

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Dichroic Mirror - 50 mm Closed - Cap GU 7 - Colour Temperature 2900°K, UV control** | | | | | | | |
| **20** | 12 | **TAL 414/CC** | 4500 | 11 | 3500 | 10 | **30927** |
| **20** | 12 | **TAL 415/CC** | 900 | 24 | 3500 | 10 | **30928** |
| **20** | 12 | **TAL 416/CC** | 450 | 36 | 3500 | 10 | **30931** |
| **35** | 12 | **TAL 417/CC** | 8100 | 8 | 3500 | 10 | **30932** |
| **35** | 12 | **TAL 418/CC** | 3240 | 18 | 3500 | 10 | **30933** |
| **35** | 12 | **TAL 419/CC** | 873 | 38 | 3500 | 10 | **30934** |
| **50** | 12 | **TAL 420/CC** | 8000 | 12 | 3500 | 10 | **30901** |
| **50** | 12 | **TAL 421/CC** | 3300 | 21 | 3500 | 10 | **30900** |
| **50** | 12 | **TAL 422/CC** | 900 | 43 | 3500 | 10 | **30899** |
| **50** | 12 | **TAL 423/CC** | 630 | 60 | 3500 | 10 | **30935** |

| | 20W | | 35W | | 50W | |
|---|---|---|---|---|---|---|
| | TAL 414 | | TAL 417 | | TAL 420 | |
| **m** | **11°** | **lux** | **8°** | **lux** | **12°** | **lux** |
| 1 | .19 | 4500 | .14 | 8100 | .21 | 8000 |
| 2 | .39 | 1125 | .28 | 2025 | .42 | 2000 |
| 3 | .58 | 500 | .42 | 900 | .63 | 889 |
| 4 | .77 | 281 | .56 | 506 | .84 | 500 |
| 5 | .96 | 180 | .70 | 324 | 1.05 | 320 |

| | TAL 415 | | TAL 418 | | TAL 421 | |
|---|---|---|---|---|---|---|
| **m** | **24°** | **lux** | **18°** | **lux** | **21°** | **lux** |
| 1 | .43 | 900 | .32 | 3240 | .37 | 3300 |
| 2 | .85 | 225 | .63 | 810 | .74 | 825 |
| 3 | 1.28 | 100 | .95 | 360 | 1.11 | 367 |
| 4 | 1.70 | 56 | 1.27 | 203 | 1.48 | 206 |
| 5 | 2.13 | 36 | 1.58 | 130 | 1.85 | 132 |

| | TAL 416 | | TAL 419 | | TAL 422 | |
|---|---|---|---|---|---|---|
| **m** | **36°** | **lux** | **38°** | **lux** | **43°** | **lux** |
| 1 | .65 | 450 | .69 | 873 | .79 | 900 |
| 2 | 1.30 | 113 | 1.38 | 218 | 1.58 | 225 |
| 3 | 1.95 | 50 | 2.07 | 97 | 2.36 | 100 |
| 4 | 2.60 | 28 | 2.75 | 55 | 3.15 | 56 |
| 5 | 3.25 | 18 | 3.44 | 35 | 3.94 | 36 |

| | TAL 423 | |
|---|---|---|
| **m** | **60°** | **lux** |
| 1 | 1.15 | 630 |
| 2 | 2.31 | 158 |
| 3 | 3.46 | 70 |
| 4 | 4.62 | 39 |
| 5 | 5.77 | 25 |

These cones are for closed lamps.

# Halogen

## TAL 100

| Watts | Volts | Product Description | Peak Beam Candelas | Beam Spread Degrees | Rated Average Life Hours | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|
| **Metal Reflector - 100 mm Closed - Cap GU 7 - Colour Temperature 3000°K, UV control** | | | | | | | |
| **35** | 12 | **TAL 138** | 33000 | 4 | 3500 | 20 | **29408** |
| **50** | 12 | **TAL 139** | 48000 | 6 | 3500 | 20 | **29409** |
| **50** | 12 | **TAL 140** | 3300 | 21 | 3500 | 20 | **29410** |

| | 35W | | 50W | | 50W | |
|---|---|---|---|---|---|---|
| | TAL138 | | TAL139 | | TAL140 | |
| **m** | **4°** | **lux** | **6°** | **lux** | **21°** | **lux** |
| 1 | .07 | 33000 | .1 | 48000 | .37 | 3330 |
| 2 | .14 | 8250 | .21 | 12000 | .74 | 825 |
| 3 | .21 | 3667 | .31 | 5333 | 1.11 | 367 |
| 4 | .28 | 2063 | .42 | 3000 | 1.48 | 206 |
| 5 | .35 | 1320 | .52 | 1920 | 1.85 | 132 |
| **Beam ø** | 50% | | 50% | | 50%peak | |

## Lampholders - Twist and Lock - TAL

| Lead Length | Product Description | Height of Socket mm | Pack Qty | Product Code |
|---|---|---|---|---|
| **Lampholders - Twist and Lock - TAL** | | | | |
| **150** | **GL1252 BR2V/150** | 11 | 500 | **31819** |
| **250** | **GL1252 BR2V/250** | 11 | 500 | **31646** |
| **150** | **GL1252 BR8V/150** | 16.5 | 500 | **32078** |
| **250** | **GL1252 BR8V/250** | 16.5 | 500 | **32074** |

# UV Control Capsules

## *All the power, quality and precision of halogen - with UV control*

UV Control Capsules

- *The ultra violet light emitted by standard halogen lamps can cause fading or bleaching of sensitive display items.*
- *GE's UV Control Capsules significantly reduce the effect of bleaching by minimising UV-B and UV-C radiation.*



**Choose ultra violet control for accent lighting of light sensitive display items.**

**GE's UV Control Capsules give maximum light output and colour quality.**

**Range includes axial filament types for use in linear miniature reflectors and uplighters, providing:**

**Wide, smooth beam** with accurate light cut-off - perfect for uniform lighting effects.

**Maximum versatility -** common light-centres across a range of wattages let you use one light fitting design for a range of applications.

**Applications:**

retail, display and task lighting.

# Halogen

## Low Voltage Halogen Capsules UV-Control

| Watts | Volts | Product Description | Cap | Filament | Max Length mm | Lumens | Pack Qty | Light centre length mm | Rated Average Life Hours | Product Code |
|---|---|---|---|---|---|---|---|---|---|---|
| **Hard Glass Capsules** | | | | | | | | | | |
| **5** | 12 | **M9** | G4 | T | 31 | 60 | 20 | 19.5 | 2000 | **42959** |
| **10** | 12 | **M11** | G4 | T | 31 | 140 | 20 | 19.5 | 2000 | **34674** |
| **Halogen Capsules** | | | | | | | | | | |
| **10** | 6 | **M29/ESA/Q10 G4** | G4 | T | 33 | 200 | 20 | 19.5 | 100 | **34720** |
| **10** | 6 | **M42/Q10 G4** | G4 | T | 33 | 140 | 20 | 19.5 | 1500 | **34728** |
| **20** | 6 | **M34/FHE/Q20 G4** | G4 | T | 33 | 350 | 20 | 19.5 | 2000 | **34719** |
| **20** | 6 | **M30/ESB/Q20 G4** | G4 | T | 33 | 450 | 20 | 19.5 | 100 | **34718** |
| **20** | 12 | **M47/Q20 G4** | G4 | T | 33 | 380 | 20 | 19.5 | 2000 | **34715** |
| **20** | 12 | **M35/Q20 G4** | G4 | T | 33 | 400 | 20 | 19.5 | 250 | **34714** |
| **20** | 12 | **M76/Q20/GY6.35** | GY6.35 | A | 44 | 300 | 20 | 30.0 | 3000 | **34712** |
| **20** | 12 | **M312/Q20/GY6.35** | GY6.35 | T | 44 | 350 | 20 | 30.0 | 2000 | **34713** |
| **35** | 6 | **M116/Q35/GY6.35** | GY6.35 | A | 44 | 600 | 20 | 30.0 | 2000 | **34711** |
| **35** | 12 | **M75/Q35/GY6.35** | GY6.35 | A | 44 | 600 | 20 | 30.0 | 3000 | **34710** |
| **35** | 12 | **M95/Q35/GY6.35** | GY6.35 | T | 44 | 550 | 20 | 30.0 | 3000 | **34708** |
| **50** | 12 | **M74/Q50/GY6.35** | GY6.35 | A | 44 | 900 | 20 | 30.0 | 3000 | **34703** |
| **50** | 12 | **M32/Q50 GY6.35** | GY6.35 | T | 44 | 850 | 20 | 30.0 | 3000 | **34702** |
| **50** | 24 | **M89/Q50/GY6.35** | GY6.35 | T | 44 | 750 | 20 | 30.0 | 2000 | **34684** |
| **75** | 12 | **M73/Q75/GY6.35** | GY6.35 | A | 44 | 1350 | 20 | 30.0 | 3000 | **34683** |
| **75** | 12 | **M313/Q75/GY6.35** | GY6.35 | T | 44 | 1350 | 20 | 30.0 | 2000 | **34682** |
| **100** | 12 | **M28/EVA/Q100 GY6.35/12** | GY6.35 | T | 44 | 2100 | 20 | 30.0 | 2000 | **34676** |
| **100** | 12 | **M180** | GY6.35 | A | 44 | 2150 | 20 | 30.0 | 3000 | **34664** |
| **100** | 24 | **M67/Q100 GY6.35/24** | GY6.35 | T | 44 | 2000 | 20 | 30.0 | 2000 | **34663** |
| **Low Pressure Halogen Capsules** | | | | | | | | | | |
| **10** | 12 | **Q10T2,5/12V G4** | G4 | A | 33 | 140 | 20 | 22 | 2000 | **35705** |
| **20** | 12 | **Q20T2,5/12V G4** | G4 | A | 33 | 320 | 20 | 22 | 2000 | **35710** |
| **20** | 12 | **Q20T3/12V GY6.35** | GY6.35 | A | 44 | 300 | 20 | 30 | 2000 | **35696** |
| **35** | 12 | **Q35T3/12V GY6.35** | GY6.35 | A | 44 | 600 | 20 | 30 | 2000 | **35699** |
| **50** | 12 | **Q50T3/12V GY6.35** | GY6.35 | A | 44 | 950 | 20 | 30 | 2000 | **35700** |
| **75** | 12 | **Q75T3/12V GY6.35** | GY6.35 | A | 44 | 1350 | 20 | 30 | 2000 | **35701** |

Filament: T - transversal and A - axial

# Halogen-IR™ Linear

Halogen-IR Linear

## *Choose Halogen-IR technology and start saving money*

- *GE Halogen-IR (Infra-red) lamps use a unique GE POW-IR - Film coating that increases lamp efficiency by more than 25%.*
- *These lamps also turn invisible infra-red light into extra visible light.*




**'The Old Bank' Happit store façade, energy-saving exterior floodlighting in London, UK.**

**Applications:**

retail, displays, reception areas and exterior floodlighting.

**GE's Halogen IR is one of the most efficient halogen lamps in the world.**

A whiter light with excellent colour rendering.
Maximum light where you need it.

**GE's HIR Linear offers you:**

**Up to 25% energy savings**
for the same light output.

**Up to 25% less heat output**
than a standard halogen linear.

# Halogen

## Standard Double Ended Linear

| Watts | Volts | Product Description | Cap | Length mm | Diameter mm | Quick Acting Fuse | Rated Average Life Lumens | Rated Average Life Hours | Pack Qty | Energy Efficiency Class | Product Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Clear** | | | | | | | | | | | |
| **100** | 230 | **K14/Q100 T3/CL** | R7s | 78 | 10 | - | 1600 | 2000 | 10 | D | **29112** |
| **150** | 230 | **K12/Q150 T3/CL** | R7s | 78 | 10 | - | 2600 | 2000 | 10 | D | **29123** |
| **150** | 230 | **K28** | R7s | 117 | 8 | 2A | 2100 | 2000 | 10 | E | **30881** |
| **200** | 230 | **K11/Q200 T3/CL** | R7s | 117 | 8 | 2A | 3100 | 2000 | 10 | E | **29134** |
| **200** | 230 | **K27** | R7s | 78 | 10 | - | 3400 | 2000 | 10 | D | **35034** |
| **250** | 230 | **K15/Q250 T3/CL** | R7s | 78 | 10 | - | 4000 | 2000 | 10 | E | **29149** |
| **250** | 230 | **K32/Q250 T2,5/CL** | R7s | 117.6 | 8 | 2A | 4000 | 2000 | 10 | E | **30884** |
| **300** | 230 | **K9/Q300 T3/CL** | R7s | 117 | 8 | 2A | 5100 | 2000 | 10 | E | **29159** |
| **500** | 230 | **K1/Q500 T3/CL** | R7s | 117 | 10 | 4A | 9800 | 2000 | 10 | - | **29165** |
| **750** | 230 | **K3/Q750 T3/CL** | R7s | 189.1 | 10 | 6.3A | 15000 | 2000 | 10 | - | **29173** |
| **1000** | 230 | **K4/Q1000 T3/CL** | R7s | 189.1 | 10 | 6.3A | 21000 | 2000 | 10 | - | **29180** |
| **1000** | 230 | **K10** | R7s | 254.1 | 10 | 6.3A | 21000 | 2000 | 10 | - | **43711** |
| **1500** | 230 | **K5/Q1500 T3/CL** | R7s | 256,1 | 10 | 10A | 32000 | 1000 | 10 | - | **29184** |
| **2000** | 230 | **K6/Q2000 T3/CL** | Fa4 | 333,0 | 10 | 10A | 44000 | 2000 | 10 | - | **29190** |
| **2000** | 230 | **K8/Q2000 T3/CL** | R7s | 333,0 | 10 | 10A | 44000 | 1000 | 10 | - | **30886** |

78mm lamps are internally fused, and universal operating position.

Other lamps operating position horizontal ±4°.

## HIR Double Ended Linear

| Watts | Volts | Product Description | Cap | Length mm | Diameter mm | Quick Acting Fuse | Rated Average Life Lumens | Rated Average Life Hours | Pack Qty | Energy Efficiency Class | Product Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Halogen IR™** | | | | | | | | | | | |
| **225** | 230 | **K9/Q225 T3/230 HIR** | R7s | 117 | 10 | 2A | 4800 | 2000 | 10 | C | **31577** |
| **375** | 230 | **K1/Q375 T3/230 HIR** | R7s | 117 | 10 | 2A | 9000 | 2000 | 10 | C | **31598** |

Operating position horizontal ±4°.

# Halogen PAR

## *Upgrade to GE Halogen using your existing light fittings*

Halogen PAR 30

- *GE Halogen PAR lamps are a range of direct replacements for standard incandescent reflector lamps.*
- *GE Halogen PAR lamps run on mains voltage, so you no longer need transformers or extra wiring to enjoy the crisp white light and energy-saving properties of halogen.*



**Halogen PAR puts the performance of halogen into your existing light fittings.**

**GE PAR 20 and PAR 30 lamps are cost-saving direct replacements for 63 mm and 95 mm incandescent reflector lamps.**

**They offer you:**

**Up to 150% longer life**

**Up to 50% energy savings**

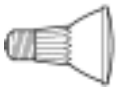
**Cool white light**
with excellent colour rendering and a cool beam.

**Maximum light**
where you need it.

**Applications:**

retail, displays,
museums, conference rooms,
private offices and
residential interior lighting.

# Halogen



## PAR 20

| Watts | Volts | Product Description | Max Length mm | Diameter mm | Peak Beam Candelas | Pack Qty | Rated Average Life Hours | Product Code |
|---|---|---|---|---|---|---|---|---|
| **PAR 20 - Cap E27 - Reflector Spot 10°** | | | **2900°K** | | | | | |
| **50** | 230 | **50PAR20/230/SP** | 90.5 | 65 | 6900 | 15 | 2500 | **34863** |
| **PAR 20 - Cap E27 - Reflector Flood 25°** | | | **2900°K** | | | | | |
| **50** | 230 | **50PAR20/230/FL** | 90.5 | 65 | 2200 | 15 | 2500 | **34866** |

## PAR 30

| Watts | Volts | Product Description | Max Length mm | Diameter mm | Peak Beam Candelas | Pack Qty | Rated Average Life Hours | Product Code |
|---|---|---|---|---|---|---|---|---|
| **PAR 30 - Cap E27 - Reflector Spot 10°** | | | **2900°K** | | | | | |
| **75** | 230 | **75PAR30/230/SP** | 90.5 | 97 | 6900 | 15 | 2500 | **32465** |
| **100** | 230 | **100PAR30/230/SP** | 90.5 | 97 | 10000 | 15 | 2500 | **32483** |
| **PAR 30 - Cap E27 - Reflector Flood 30°** | | | **2900°K** | | | | | |
| **75** | 230 | **75PAR30/230/FL** | 90.5 | 97 | 2200 | 15 | 2500 | **32463** |
| **100** | 230 | **100PAR30/230/FL** | 90.5 | 97 | 3500 | 15 | 2500 | **32484** |

| | **75W** Spot | | **100W** Spot | | **75W** Flood | | **100W** Flood | |
|---|---|---|---|---|---|---|---|---|
| **m** | **10°** | **lux** | **10°** | **lux** | **30°** | **lux** | **30°** | **lux** |
| 1 | .17 | 6900 | .17 | 10000 | .53 | 2200 | .53 | 3500 |
| 2 | .35 | 1725 | .35 | 2500 | 1.07 | 650 | 1.07 | 875 |
| 3 | .52 | 765 | .52 | 1110 | 1.80 | 246 | 1.80 | 390 |
| 4 | .70 | 430 | .70 | 625 | 2.14 | 140 | 2.14 | 220 |

# Halogen

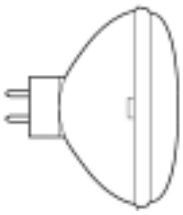
## PAR 36

| Watts | Volts | Product Description | Length mm | Diameter mm | Peak Beam Candelas | Pack Qty | Rated Average Life Hours | Product Code |
|---|---|---|---|---|---|---|---|---|
| **PAR 36 - Screw Terminal Cap - Reflector 3000°K** | | | | | | | | |
| **35** | 12 | **35PAR36/VNSP/H** | 70 | 114 | 25000 | 12 | 4000 | **19873** |
| **35** | 12 | **35PAR36/WFL/H** | 70 | 114 | 9000 | 12 | 4000 | **19877** |
| **50** | 12 | **50PAR36/WFL/H** | 70 | 114 | 1300 | 12 | 4000 | **19880** |

| | 35W | | 35W | | 50W | |
|---|---|---|---|---|---|---|
| | VNSP/H | | WFL/H | | WFL/H | |
| **m** | **5°** | **lux** | **30°** | **lux** | **30°** | **lux** |
| 1 | .09 | 25000 | .57 | 900 | .57 | 1300 |
| 2 | .17 | 6250 | 1.15 | 225 | 1.15 | 325 |
| 3 | .26 | 2780 | 1.72 | 100 | 1.72 | 140 |
| 4 | .35 | 1560 | 2.29 | 55 | 2.29 | 80 |
| 5 | .44 | 1000 | 2.87 | 35 | 2.87 | 50 |

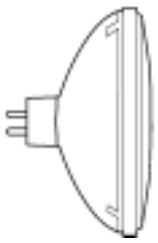
## PAR 56

| Watts | Volts | Product Description | Approx Beam Spread 10% Peak CD | 50% Peak CD | Peak Beam Candelas | Pack Qty | Rated Average Life Hours | Product Codex |
|---|---|---|---|---|---|---|---|---|
| **PAR 56 - Cap GX16d Reflector 2950°K** | | | | | | | | |
| **500** | 120 | **Q500PAR56NSP** | 32 x 15 | 13 x 8 | 96000 | 6 | 4000 | **43494** |
| **500** | 120 | **Q500PAR56MFL** | 42 x 20 | 26 x 10 | 43000 | 6 | 4000 | **43495** |
| **500** | 120 | **Q500PAR56WFL** | 66 x 34 | 44 x 20 | 19000 | 6 | 4000 | **43496** |

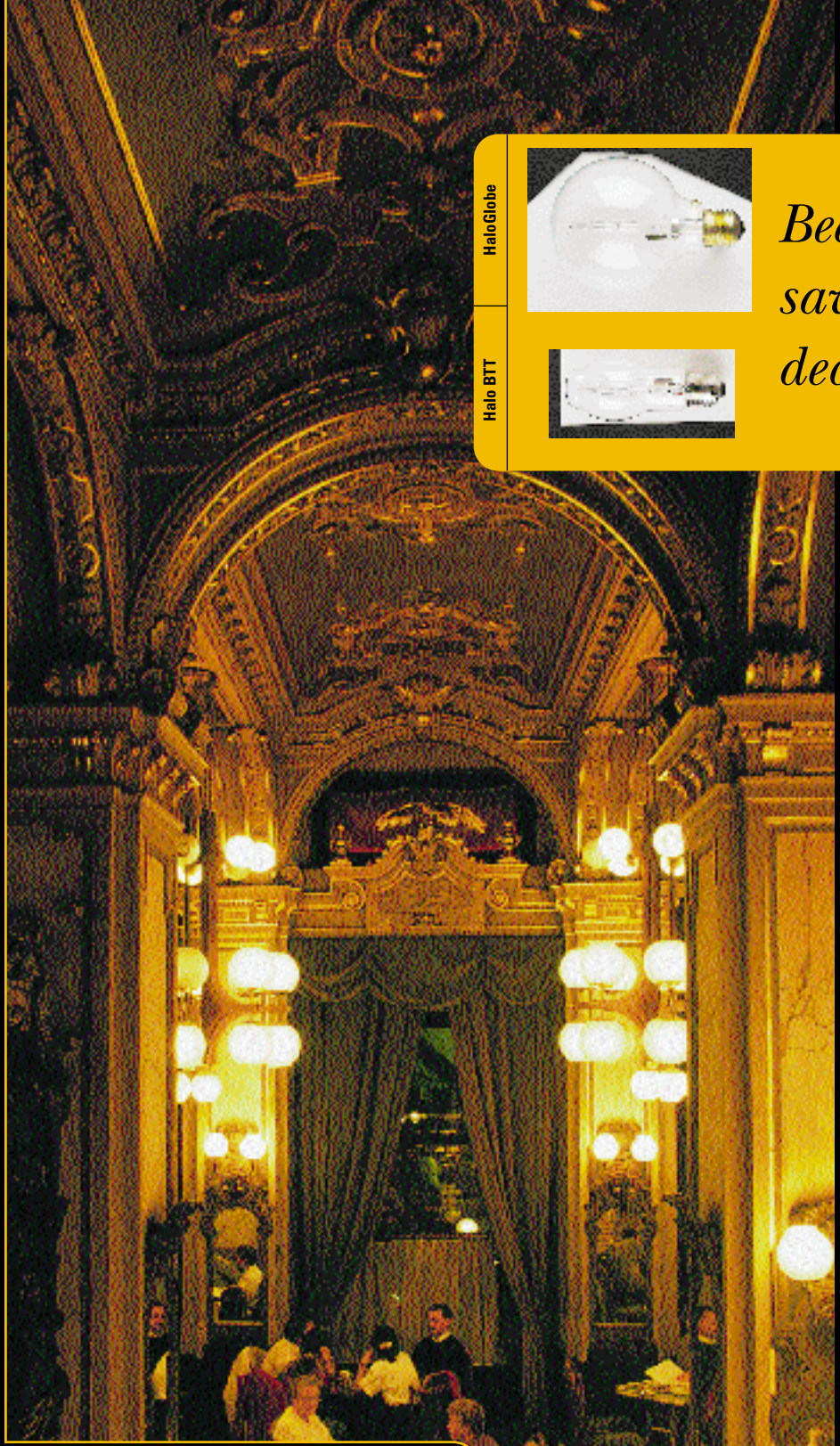


## PAR 64

| Watts | Volts | Product Description | Approx Beam Spread 10% Peak CD | 50% Peak CD | Peak Beam Candelas | Pack Qty | Rated Average Life Hours | Product Code |
|---|---|---|---|---|---|---|---|---|
| **PAR 64 - Cap GX16d Reflector 3000°K** | | | | | | | | |
| **1000** | 120 | **Q1000PAR64NSP** | 31 x 14 | 15 x 8 | 200000 | 6 | 4000 | **43497** |
| **1000** | 120 | **Q1000PAR64MFL** | 45 x 22 | 28 x 12 | 80000 | 6 | 4000 | **43498** |
| **1000** | 120 | **Q1000PAR64/WFL** | 75 x 45 | 48 x 24 | 33000 | 6 | 4000 | **43499** |



# HaloGlobe™ & Halo BTT™



HaloGlobe



Halo BTT



## *Beauty and cost-saving for your decorative lights*

- *GE HaloGlobe and Halo BTT lamps combine the efficiency, economy and performance of halogen with classic lamp good looks.*
- *Higher light output and improved colour rendering make them ideal in the most demanding locations.*

**GE HaloGlobe - the replacement for Decor 95 mm lamps is available in clear and white, 60, 100 and 150W.**

**GE Halo BTT - the replacement for GLS lamps is available in clear, 60 and 100W.**

**Crisper, whiter light**
with improved colour rendering.

**Improved efficiency**
with up to 50% more light for the same energy consumption.

**Save maintenance costs**
with up to two times longer life.

**Versatility and flexibility**
You can install these lamps at any angle with no reduction in lamp life.

**Easy installation**
HaloGlobe and Halo BTT - with their outer glass covers, can be handled like any ordinary GLS lamp.

**HaloGlobe lamps complement the classical architecture of the Cafe Hungaria, Budapest, Hungary.**

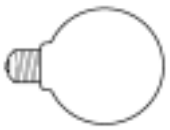
**Applications:**
hotels, pubs, restaurants, offices, retail and residential.

# Halogen

## HaloGlobe

| Watts | Volts | Product Description | Max Length mm | Lumens | Pack Qty | Rated Average Life Hours | Energy Efficiency Class | Product Code |
|---|---|---|---|---|---|---|---|---|
| **Halogen- Cap E27 - Opal - Diameter 95 mm** | | | | | | | | |
| **60** | 230 | **Halo G95/60 ES/230WH** | 138.5 | 700 | 10 | 2000 | E | **32026** |
| **100** | 230 | **Halo G95/100ES/230WH** | 138.5 | 1350 | 10 | 2000 | E | **32032** |

Operating position: Universal.



## Halo BTT™

| Watts | Volts | Product Description | Cap | Max Length mm | Diameter mm | Lumens | Rated Average Life Hours | Finish | Pack Qty | Energy Efficiency Class | Product Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Halo BTT™ - Temperature 2850°K** | | | | | | | | | | | |
| **60** | 230 | **Halo BTT 60 ES 230 CL** | E27 | 118 | 47 | 820 | 2000 | clear | 10 | D | **32087** |
| **100** | 230 | **Halo BTT 100 ES 230 CL** | E27 | 118 | 47 | 1500 | 2000 | clear | 10 | D | **32097** |
| **60** | 230 | **Halo BTT 60 ES 230 WH** | E27 | 118 | 47 | 700 | 2000 | opal | 10 | E | **35410** |
| **100** | 230 | **Halo BTT 100 ES 230 WH** | E27 | 118 | 47 | 1350 | 2000 | opal | 10 | E | **35403** |

Operating position: Universal.

## HaloT

| Watts | Volts | Product Description | Cap | Max Length mm | Diameter mm | Lumens | Rated Average Life Hours | Finish | Pack Qty | Product Code |
|---|---|---|---|---|---|---|---|---|---|---|
| **Halo T - Temperature: 500W - 2900°K, 1000W - 2850°K** | | | | | | | | | | |
| **500** | 230 | **Halo T38/500W/E40/230** | E40 | 215 | 38 | 9500 | 2000 | clear | 10 | **32106** |
| **1000** | 230 | **Halo T38/1000W/E40/230** | E40 | 280 | 38 | 21000 | 2000 | clear | 10 | **32108** |

Operating position: Horizontal ±4°.

# Halogen lamps

Halogen lamps provide a compact, high output light source popular for accent, display and general lighting applications in a wide variety of commercial, industrial and residential environments.

### Choosing the right lamp

To help you achieve the most effective spread and level of illumination for your particular application, use the performance cones shown in this catalogue.

### Assessing performance cones

Performance cones show the area, strength and distribution of light produced by each lamp. This varies according to the level of illuminance produced by the lamp (lux), the height of the lamp above the object being illuminated, and the beam angle of the lamp selected.

### Selecting power and beam

Comparing performance cones lets you select the correct lamp for your needs. For example, GE's most commonly used mirror lamp, the 50W EXZ Precise MR16 ConstantColor with a beam angle of 25°, would produce 700 lux at 2 metres height with a beam diameter of 0.9 metres.

If, however, you wanted a smaller beam diameter of say 0.4 metres, the 20W spot beam ESX with its narrower 13° beam angle would be more effective, producing 838 lux. This would provide 15% extra luminance with a 60% reduction in energy consumption.

### Selecting beam angles

GE halogen lamps are offered in a range of beam angles from 7° to 60°. Choose small beam angles to highlight single features with a tight focus or wide beam angles to provide a wash of ambient lighting, with a variety of effects achievable with intermediate beams.

Figure 1
**Choosing the right power and beam**

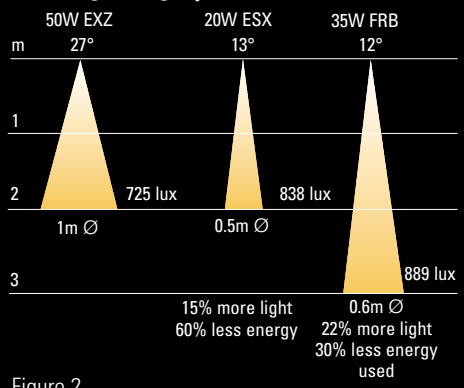
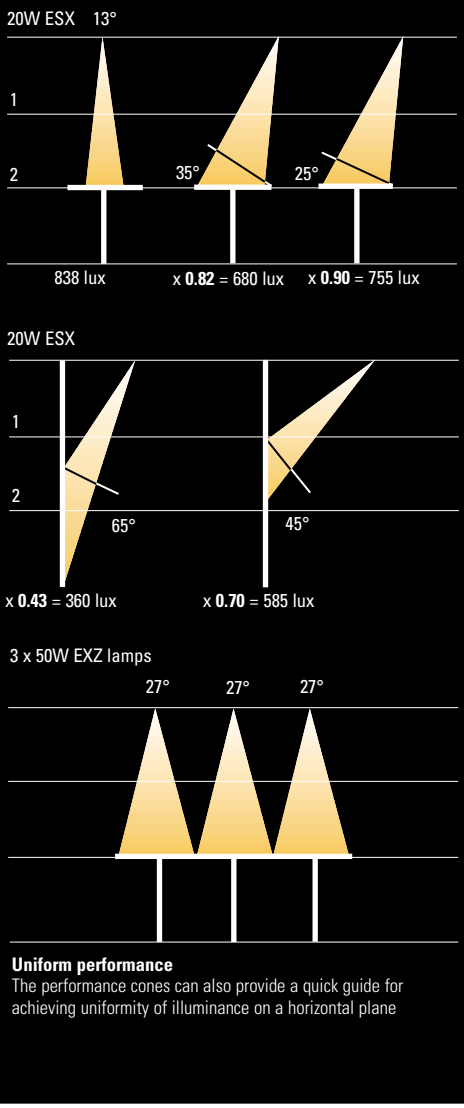



Figure 2
**Choosing beam angles**




**Uniform performance**
The performance cones can also provide a quick guide for achieving uniformity of illuminance on a horizontal plane

**Select UV control**
Tungsten Halogen lamps emit ultra violet rays similar to sunlight. Although the level of ultra violet emitted by halogen lamps is far lower - for example 8 hours in an office lit by halogen is equivalent to 10 minutes' sun - eliminating these emissions is a sensible precaution. Choosing UV control halogen lamps effectively eliminates UV-C and greatly reduces UV-B radiation.

**How to achieve maximum lamp performance**
Most instances of early failure of halogen lamps are caused by incorrect installation. The risk of early failure will be reduced if you observe the following points:

• **Damage** such as bent pins and cracks in the ceramic base caused by rough handling during installation.

• **Poor electrical contact** between pins and lampholder which can lead to arcing. This is usually a result of insufficient insertion of the pins into the lamp holder.

• **Finger grease** on the quartz bulb which creates local hot spots and can lead to disintegration of the glass. Note this problem is avoided with sealed mirror lamps as the bulb is protected from handling.

• **Over voltage** - running a lamp at higher than rated voltage for prolonged periods can substantially reduce life. For example, a 5% increase in rated lamp voltage can lead to a 50% reduction in lamp life. If problems occur the voltage should be checked at the lamp base and the rating of the transformer should be checked against the lamp load applied.

• **Overheating** is usually caused by insufficient ventilation or cooling of the lamp and can be the result of poorly designed lamp fittings or installation.

• **Open lamps** should only be used within a luminaire with a protective shield.

**Atmospheric factors**
In harsh atmospheric conditions we would recommend ConstantColor which has a much more resilient coating plus the added advantage of 6000 hours.

Humidity does not normally present a problem with dichroic lamps, however early lamp failure can occur in areas of high humidity such as in kitchens, bathrooms and swimming pools.
In these applications, fittings should be chosen with a moisture resistance or IP rating, appropriate to the environmental conditions in which they will be used.

Narrow-focus halogen light used to create striking display highlights at a fashion outlet on Avenue De Montaigne, Paris, France.